UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/658,784	09/11/2000	Ivo Raaijmakers	ASMEX.236A	4439

20995 7590 11/28/2001

KNOBBE MARTENS OLSON & BEAR LLP
620 NEWPORT CENTER DRIVE
SIXTEENTH FLOOR
NEWPORT BEACH, CA 92660

EXAMINER
ZERVIGON, RUDY

ART UNIT	PAPER NUMBER
1763	

DATE MAILED: 11/28/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/658,784	Raaijmakers et al
Examiner	**Art Unit**
Rudy Zervigon	1763

-- Th MAILING DATE of this communication appears on the cover she t with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Sep 10, 2001*

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-67* is/are pending in the applica

4a) Of the above, claim(s) *23-56* is/are withdrawn from considera

5) ☒ Claim(s) *22 and 61* is/are allowed.

6) ☒ Claim(s) *1-11, 13, 15-21, 57, 58, and 62-66* is/are rejected.

7) ☒ Claim(s) *12, 14, 59, 60, and 67* is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *Sep 11, 2000* is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

19) ☐ Notice of Informal Patent Application (PTO-152)

20) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "20j" (Fig. 12, 13) and "20i" (Pages 16-17) have both been used to designate "inlet load lock" (page 16, line 31). Correction is required.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "26" (Fig.2A) has been used to designate both "load lock chamber" (page 6, line 5) and "elevator plate" (page 5, line 30). Correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-11, 13, 15-21, 57, 58, and 62-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Joe Wytman (EP0834907A2).

Joe Wytman describes:

i. 1. A load lock (item 10, Figures 1-3; column 6, lines 12-23) that defines at least partially a first chamber (item 14, Figures 1-3; column 6, lines 12-23) and an auxiliary chamber (item 30/12, Figures 1-3; column 7, lines 17-50), the load lock comprising:

ii. a first port (item 18, Figures 1-3; column 6, lines 8-10) and a second port (item 16, Figures 1-3; column 6, lines 1-6), the first and second ports for moving a wafer into and out of the load lock ; an elevator plate (item 22, Figures 1-3; column 6, lines 12-23) including a wafer carrier (item 11, Figures 1-3; column 6, lines 1-11) that is adapted for receiving a plurality of wafers (items W, Figures 1-3; column 5, lines 54-58); and the wafer carrier being moveable (items 26, 28; Figures 1-3; column 6, lines 24-42) between a first position (Figure 3) where the wafer carrier is in the first chamber and a, second position (Figure 2) where the wafer carrier is in the auxiliary chamber and the elevator plate substantially seals (items 32, 24; Figures 1-3; column 7,lines17-50) the auxiliary chamber from the first chamber.

iii. 2. A load lock as set forth in Claim 1, wherein the load lock is formed at least in part by a first housing portion (item 14,Fig.1-3;column 6,lines12-23) and an auxiliary housing portion that is removably (26,28,34; Fig.1-3; column 6, lines24-42,column 7,lines25-30) coupled to the first portion (item 14,Fig.13;column 6,lines12-23).

iv. 8. A load lock port as set forth in Claim 7, wherein the load lock comprises a first housing portion and an auxiliary housing portion that at least partially defines (see common wall, Fig.1-3) the auxiliary chamber , the first and second ports being located on the first housing portion.

v. 10. A load lock as set forth in Claim 9, wherein the first port communicates with a wafer handling module (item 102,Fig.1-3;column 9,lines19-47).

vi. 18. A load lock as set forth in Claim 1, wherein the auxiliary chamber includes inner walls (volume enclosing item 30) that are adapted to withstand an auxiliary fluid (column 7, lines 51-58).

vii. 20. A load lock as set forth in Claim 1, wherein the load lock further includes heating elements (item 47, Figure 1; column 7, lines 54-55).

viii. 21. A load lock as set forth in Claim 20, wherein the heating elements are located within the auxiliary chamber.

ix. 57. A system for processing substrates, comprising a load lock chamber including a lower portion having a first inner width and an upper portion (item 30/12,Figures 1-3; column 7, lines 17-50) having a narrower second inner width (Figures 1-3, where 47's rest), the

chamber including a first port and a second port , each of the ports sized to pass substrates therethrough, the load lock chamber further comprising a moveable platform, with shelves (holding wafers "W"), configured to support at least one substrate thereon and sized to have a width (Figures 1-3) less than the first inner width (Figures 1-3) and greater than the second inner width to enable selectively sealing the upper portion with the at least one substrate supported thereon and including gas injectors (40, 44; Fig.1); an auxiliary processing system, or "auxiliary processing solution source" (page 7, lines 8-13), described by Wytman as items 40 and 44 of Figure 1; Wytman eludes to clean room connectivity of the load lock chamber (column 1, lines 23-24).

However, Joe Wytman does not describe:

x. 1. A wafer carrier that is attached or is not attached to the elevator plate.

xi. 15. A load lock wherein the load lock further includes a second elevator plate - The reproduction of apparatus components has been held to obvious. See MPEP 2144.04.

xii. 57. At least one process chamber selectively communicating with the substrate handling chamber.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to attach the Wytman wafer carrier to the elevator plate.

Motivation for attaching the Wytman wafer carrier to the elevator plate is drawn from the level of ordinary skill in the art at the time the invention was made where such an attachment would insure that the wafer carrier would not tip over during transfer between Wytman's upper chamber 12 and

Wytman's lower chamber 14 so that robot 102 would secure and transfer the wafer onto further processing (column 9, lines 19-47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add an additional elevator plate above or below the Wytman elevator plate (22).
Motivation for adding an additional elevator plate above or below the Wytman elevator plate (22) is drawn from the level of ordinary skill in the art whereby by adding additional elevator plates the seal between Wytman's chambers 14 and 12, for a constant force provided through conveying mechanism 26, would provide enhanced hermeticity between these chambers.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to selectively communicate at least one process chamber with the substrate handling chamber (item 100, Figure 1).

Motivation for selectively communicating at least one process chamber with the substrate handling chamber is drawn from the level of ordinary skill in the art and is discussed by Joe Wytman (column 1, lines 13-24), and is directed to "processing typically occurs within high vacuum process chambers".

Allowable Subject Matter

5. Claims 22 and 61 are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter: The closest prior art to claim 22 is to Joe Wytman (EP0834907A2) who teaches a load lock wherein the heating elements are located upon the "sub-chamber"/ "upper chamber" interface (auxiliary chamber 30, Fig.1) as apposed to the elevator plate as claimed. The closest prior art to claim 61 is to Joe Wytman (EP0834907A2) who teaches wherein the first port, as defined in claim 61 as the interface between the "substrate handling chamber" and the "load lock chamber" is located in the **lower** portion (item 14,Figures 1-3) of the load lock. However, amended claim 61 requires that the first port be located in the **upper** portion.

7. Claims 12, 14, 59, 60, and 67 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims 1-11, 15-21, 57, 58, and 62-66 have been considered but are moot in view of the new grounds of rejection.

9. In response to Applicant's position that "the load lock of Wytman differs structurally", it is noted that both of Wytman's first (item 18, Figures 1-3; column 6, lines 8-10) and second port (item 16, Figures 1-3; column 6, lines 1-6) *open* into both a first chamber (12) and a lower chamber (14) *when* the support plate (22) *is* intermediate between these chambers as shown in figures 2 and 3.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Rudy Zervigon whose telephone number is (703) 305-1351. The examiner can normally be reached on a Monday through Thursday schedule from 8am through 7pm. The official after final fax phone number for the 1763 art unit is (703) 305-3599. Any Inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Chemical and Materials Engineering art unit receptionist at (703) 308-0661. If the examiner can not be reached please contact the examiner's supervisor, Gregory L. Mills, at (703) 308-1633.

GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700